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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/054,376	01/22/2002	Gale D. Johnson	3123-399	5893

25231 7590 03/17/2004

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EXAMINER

KLIMOWICZ, WILLIAM JOSEPH

ART UNIT	PAPER NUMBER
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2652

DATE MAILED: 03/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/054,376

Applicant(s)

JOHNSON ET AL.

Examiner

William J. Klimowicz

Art Unit

2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-48 and 50-62 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 50-56 and 60-62 is/are allowed.
- 6) ☒ Claim(s) 1-6, 11-18, 23-26, 28, 32-38, 43-46 and 57-59 is/are rejected.
- 7) ☒ Claim(s) 7-10, 19-22, 27, 29-31, 39-42, 47 and 48 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-6, 11-17, 23-26, 28, 32-37, 43-45 and 57-59 are rejected under 35 U.S.C. 102(e) as being anticipated by Misso (US 6,088,193).

As per claims 1, 23 and 43, Misso (US 6,088,193) discloses a disk drive (100), comprising: a housing (102, 104); at least one data storage disk (108) movably interconnected with said housing (102, 104); an actuator arm assembly (112) movably interconnected with said housing (102, 104) by an actuator arm pivot (114); an actuator arm drive assembly (124) interconnected with said actuator arm assembly (112); a transducer (120) interconnected with said actuator arm assembly (112) and disposable in alignment with said at least one data storage disk (108) by said actuator arm drive assembly (124); and an actuator arm latch assembly (138, including 140) comprising a latch pivot (172) and a first latch member (160) movably mounted on said latch pivot (172), wherein said latch pivot (172) is disposed in non-parallel relation to said actuator arm pivot (114) (*cf.*, FIGS. 1-5), and wherein said first latch member (160) moves from a non-latching position (e.g. FIG. 5) to a latching position (e.g., FIG. 4) in response to said disk drive (100) experiencing a shock event. More concretely, as the disk drive operates, a

Art Unit: 2652

“shock event” may occur, in which the actuator moves relative to the disk drive base causing movement of the latch pin (140) toward the direction of arrow (188) (as seen in FIG. 5) to thereby contact latching surface (190), thus causing the latch (160) to pivot into the latched position as seen in FIG. 4. This shock event, e.g., could arise from a force being applied to the right side of FIG. 6, causing the actuator (based on its inertial mass) to move in an opposite direction toward the inner diameter of the disk, and hence become latched in the aforementioned manner. That is, although the movement from the unlatched position (Fig. 5) to the latched position (FIG. 4) can indeed be accomplished by movement caused by energization of the coil of the voice coil motor (VCM), absolutely nothing precludes the movement of the actuator arm in a direction of (188) due to a shock force, instead of application of the coil being energized, from occurring.

As per claim 2, wherein said housing (102, 104) comprises a base plate (102).

As per claim 3, wherein said actuator arm assembly (112) is a rotary actuator arm assembly (FIG. 1).

As per claim 4, wherein said transducer (120) is a read/write transducer - COL. 3, line 61.

As per claims 5 and 23, wherein said housing (102, 104) comprises a base plate (102), wherein said first latch member (160) comprises a latch (which includes latch end (164) which secures the latch at its latching and unlatching positions), wherein said first latch member (160) is movable between non-latching (e.g., FIG. 5) and latching positions (e.g., FIG. 4) about said latch pivot (172), and wherein said latch (e.g., 164) is disposed further from said base plate (102 - note that lower plate (129) resides on (102)) when said first latch member (160) is in said latching position (FIG. 4) versus said non-latching position (FIG. 5).

Art Unit: 2652

As per claims 6, 26 and 43, wherein said first latch member (160) comprises a first cup (164 - see FIG. 2, wherein member (164) is shaped like a drinking cup with a hole (170) provided therein) and a latch (e.g., either of (178 or 174)), wherein said actuator arm latch assembly (138) further comprises a first inertial mass (176) that is at least partially disposed within said first cup (164).

As per claims 11 and 32, wherein said at least one data storage disk (108) is movably interconnected with said base (102) within a first reference plane, wherein a second reference plane is perpendicular to said first reference plane, and wherein said actuator arm latch assembly (138) comprises means (e.g., including groove (174) and pin (140)) for latching said actuator arm assembly (112) both when said disk drive (100) is exposed to a force having at least a primary component that is within said first reference plane and when said disk drive (100) is exposed to a force having a primary component that is within said second reference plane. This occurs since a force in a direction parallel to the base plate (102) causes pin (140) to engage surface (190) of the latch assembly to latch the actuator assembly (112) and when a force is applied perpendicularly thereto, pin (140) essentially remains stationary (at the position of FIGS. 4 or 5, while the latch groove (174) moves due to a vertical force, e.g., a vertical force that pushes down on cover (upper plate (129)) and causes the latch to move upward - see FIG. 5 (via Newton's laws of inertial physics), "temporarily" releasing pin (140) from latch groove (174), and when the force terminates the latch again moves to a position of FIG. 4, whereby the groove (174) engages pin (140) to thereby again "latch" the pin.

As per claims 12 and 33, wherein said housing (102 104) comprises a base plate (102), and wherein said actuator arm latch assembly (138) comprises means (e.g., including groove

Art Unit: 2652

(174) and pin (140)) for latching said actuator arm assembly (138) when said disk drive (100) is exposed to a force having a primary component that is at least generally parallel with said base plate (102), as well as when said disk drive (100) is exposed to a force having a primary component that is at least generally perpendicular to said base plate (102) - see the discussion of claim 11, *supra*.

As per claims 13 and 34, wherein said actuator arm latch assembly (138) comprises means for latching (e.g., including groove (174) and pin (140)) said actuator arm assembly (112) when said disk drive (100) is exposed to a force selected from the group consisting of a linear force, a rotational force, and any combination thereof (e.g., see FIGS. 4 and 5).

As per claim 14, wherein a primary axis of said latch pivot (172) is disposed within a first reference plane (e.g. plane of base (102)) that is at least generally perpendicular to a second reference plane (e.g., plane in which pivot (114) resides) that contains a primary axis of said actuator arm pivot (114) (e.g., cf. FIGS. 1-5).

As per claims 15 and 35, wherein said actuator arm latch assembly (138) comprises means for biasing said first latch member to a non-latching position (FIG. 5 - see also COL. 6, lines 16-18).

As per claims 16, 36 and 44, wherein said actuator arm latch assembly (138) comprises a second latch member (142/152) fixedly mounted to said housing (102, 104), whereby said second latch member (142/152) does not move relative to said housing (102, 104).

As per claims 17, 37 and 45, wherein said latch pivot (172) is integrally formed with said second latch member (142/152).

Art Unit: 2652

As per claim 24, wherein said latch pivot (172) is disposed in non-parallel relation to said actuator arm pivot (114) (i.e., an axis about which said actuator arm assembly moves).

As per claim 25, wherein a primary axis of said latch pivot (172) is disposed within a first reference plane (parallel to base (102)) that is at least generally perpendicular to a second reference plane (plane in which pivot (114) resides) that contains a primary axis of said actuator arm pivot (114).

As per claim 28, wherein said first cup comprises a planar base and an annular sidewall (see FIGS. 4, 5 and 2).

As per claims 57-59, wherein said actuator arm latch assembly further comprises a first inertial mass (e.g., the mass associated with actuator end, which affixes and includes pin (140)), wherein an acceleration of said first inertial mass due to the shock event, as articulated in the rejection of claim 1, *supra*, causes said first inertial mass (including (140)) to exert a force on said first latch member (160) (at latching surface (190)) that attempts to move said first latch member (160) from said non-latching position (FIG. 5) to said latching position (FIG. 4).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18, 38 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Misso (US 6,088,193).

Art Unit: 2652

See the description of Misso (US 6,088,193), *supra*.

With regard to claims 18, 38 and 46, although Misso (US 6,088,193) remain silent with respect to the composition of the first and second latch member as being plastic, Official notice is taken that plastic latch members used in disk drives are notoriously old and well known and ubiquitous in the art; such Officially noticed fact being capable of instant and unquestionable demonstration as being well-known.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the latch members of Misso (US 6,088,193) as being conventional plastic.

The rationale is as follows: one of ordinary skill in the art would have been motivated to provide the latch members of Misso (US 6,088,193) as being conventional plastic in order to provide a latch assembly that can be easily manufactured in an inexpensive manner, while providing a durable and lightweight non-magnetic material for support, as is known in the art.

### ***Response to Arguments***

Applicants' arguments filed January 30, 2004 (Paper No. 4) have been fully considered but they are not persuasive.

The Applicants allege that Misso (US 6,088,193) fails to disclose a first latch member that moves from a non-latching position to a latching position in the manner set forth in the amended claims.

The Examiner respectfully disagrees. More concretely, as per claims 1, 23, 43 and 49, Misso (US 6,088,193) discloses an actuator arm latch assembly (138, including 140) comprising a latch pivot (172) and a first latch member (160) movably mounted on said latch pivot (172),



Art Unit: 2652

wherein said latch pivot (172) is disposed in non-parallel relation to said actuator arm pivot (114) (*cf.*, FIGS. 1-5), and wherein said first latch member (160) moves from a non-latching position (e.g. FIG. 5) to a latching position (e.g., FIG. 4) in response to said disk drive (100) experiencing a shock event. More concretely, as the disk drive operates, a “shock event” may occur, in which the actuator moves relative to the disk drive base causing movement of the latch pin (140) toward the direction of arrow (188) (as seen in FIG. 5) to thereby contact latching surface (190), thus causing the latch (160) to pivot into the latched position as seen in FIG. 4. This shock event, e.g., could arise from a force being applied to the right side of FIG. 6, causing the actuator (based on its inertial mass) to move in an opposite direction toward the inner diameter of the disk, and hence become latched in the aforementioned manner. That is, although the movement from the unlatched position (Fig. 5) to the latched position (FIG. 4) can indeed be accomplished by movement caused by energization of the coil of the voice coil motor (VCM), absolutely nothing precludes the movement of the actuator arm in a direction of (188) due to a shock force or event, instead of application of the coil being energized, from occurring.

Moreover still, as per claims 57-59, wherein said actuator arm latch assembly further comprises a first inertial mass (e.g., the mass associated with actuator end, which affixes and includes pin (140)), wherein an acceleration of said first inertial mass due to the shock event, as articulated in the rejection of claim 1, *supra*, causes said first inertial mass (including (140)) to exert a force on said first latch member (160) (at latching surface (190)) that attempts to move said first latch member (160) from said non-latching position (FIG. 5) to said latching position (FIG. 4).

Art Unit: 2652

It is noted that the Applicants have not seasonably challenged the Examiner's position regarding the use of Official notice (pertaining to "plastic latch members" as set forth previously in Office action Paper No. 3, mailed October 29, 2003, and reiterated above, in the rejection of claims 18, 38 and 46) as taken in the previous Office action (Paper No. 8) by requesting "a demand for evidence."

As has been established in patent practice, as articulated in the MPEP § 2144.03:

If applicant does not seasonably traverse the well known statement during examination, then the object of the well known statement is taken to be admitted prior art. *In re Chevenard*, 139 F.2d 71, 60 USPQ 239 (CCPA 1943). A seasonable challenge constitutes a demand for evidence made as soon as practicable during prosecution. Thus, applicant is charged with rebutting the well known statement in the next reply after the Office action in which the well known statement was made. This is necessary because the examiner must be given the opportunity to provide evidence in the next Office action or explain why no evidence is required. If the examiner adds a reference to the rejection in the next action after applicant's rebuttal, the newly cited reference, if it is added merely as evidence of the prior well known statement, does not result in a new issue and thus the action can potentially be made final. If no amendments are made to the claims, the examiner must not rely on any other teachings in the reference if the rejection is made final.

Since the Applicants did not seasonably traverse the well known statement during examination, the object of the well known statement has been taken to be admitted prior art.

#### ***Allowable Subject Matter***

Claims 7-10, 19-22, 27, 29-31, 39-42, 47 and 48 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2652

Claims 50-56 and 60-62 are currently allowable<sup>4</sup> in the manner presently set forth in the claims, over the applied art of record.

### *Conclusion*

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

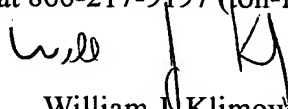
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William J. Klimowicz whose telephone number is (703) 305-3452. The examiner can normally be reached on Monday-Thursday (6:30AM-5:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2652

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
William J. Klimowicz  
Primary Examiner  
Art Unit 2652

WJK